

illness-associated sense of helplessness in an asthmatic patient. Preliminary experience with the Mini-Wright Peak Flow Meter indicates that selected patients can use this PEFr sliding-scale regimen to improve daily control, resulting in fewer visits for emergency medical care and, perhaps, fewer admissions to hospital.

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REFERENCES

Gregg I: The measurement of peak expiratory flow rate and its application in general practice. *J Coll Gen Pract* 1964 Mar; 7: 199-214

Henderson WR, Shelhamer JH, Reingold DB, et al: Alpha-adrenergic hyper-responsiveness in asthma. *N Engl J Med* 1979 Mar 22; 300(12):642-647

Turner-Warwick M: On observing patterns of airflow obstruction in chronic asthma. *Br J Dis Chest* 1977 Apr; 71(2):73-86

Advanced Trauma Life Support

TRAUMA IS SURPASSED only by arteriosclerosis and cancer as the leading cause of death in the United States and is the leading cause of death in the first three decades of life. Primary care physicians are often responsible for the initial care of trauma victims.

Trauma care training previously had been carried out by preceptorship and lectures, neither of which allowed a "hands on" learning experience. Standards for resuscitation of a trauma victim such as those set forth by the American Heart Association for advanced cardiac life support (ACLS) did not exist before 1977. In 1977 a course in advanced trauma life support (ATLS) was developed and revised by the Lincoln Medical Education Foundation, Physicians' Committee on Trauma, Southeast Nebraska Emergency Medical Services, the American College of Surgeons, The University of Nebraska School of Medicine and a number of practicing surgeons. The course was presented statewide in Nebraska to practicing primary care physicians, who were overwhelmingly in favor of the format. As a result, improvement in the condition of severely injured patients was noted.

The ATLS course is quite similar in format to the ACLS course. It is designed for family practitioners and emergency room physicians. There are ten lecture and slide presentations and ten practical skill stations. With these skill stations and lectures, physicians learn various lifesaving techniques, such as chest tube insertion, pericardiocentesis, cricothyroidotomy, peritoneal lavage, application of an antishock garment, application of splints and spinal boards, radiographic interpretation, patient assessment, intravenous catheter placement technique, fluid replacement and endo-

tracheal intubation with an emphasis on nasotracheal intubation. Students must show satisfactory knowledge and technical performance of these skills to their instructor to pass the course. Anesthetized dogs are used for teaching some of the invasive skills. The initial skill assessment station is particularly noteworthy in that it gives students a chance to practice their skills and to be tested on the ability to initially assess and treat a multiply injured patient. Well-coached persons with appropriate simulated injuries are used as patients for students to assess. The students review case histories and appropriate physical findings. The chaos of the typical emergency room is created by the "patients" and the supportive nursing staff. A student must systematically examine a patient, perform lifesaving interventions, order and interpret the appropriate laboratory and x-ray studies in a specified time; otherwise the "patients" will die of their injuries.

Instructor level courses are also available for those interested in teaching ATLS courses. At the University of California, Los Angeles (UCLA), the Family Practice Group has found this training especially useful for physicians in rural sites and an adjunct to ACLS courses for physicians with an active hospital practice. The ATLS course is now available nationally through several groups.

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REFERENCES

Carveth SW, Burnap TK, Bechtel J, et al: Training in advanced cardiac life support. *JAMA* 1976 May 24; 235(21):2311-2315

Collicott PE: Advanced trauma life support course: An improvement in rural trauma care. *Nebr Med J* 1979 Sep; 64(9): 279-280

Collicott PE, Hughes I: Training in advanced trauma life support. *JAMA* 1980 Mar 21; 243(11):1156-1159

Preoperative Preparation of Patients

ABOUT 18 YEARS AGO Egbert and co-workers reported that preoperative visits were beneficial in that they gave support and information to patients having elective surgical procedures. The study showed substantial reduction in the use of narcotics, earlier resumption of activities and shortened hospital stays in addition to subjective benefit. Other studies have suggested relaxation techniques taught to patients having an elective operation reduced incisional pain and the need for analgesics postoperatively. Furthermore, informing surgical patients about sensations that will be experienced during the perioperative period effectively reduced stress and the length of hospital stay.

Despite this evidence, routine preoperative

visits by an anesthesiologist or surgeon continue to be mainly perfunctory; rarely is an attempt made by a busy physician to understand a patient's anxieties or to teach simple pain-control techniques. In some hospitals nursing services have taken over this task.

Though program formats vary, efforts are being made to offer all patients this preoperative preparation. At the San Jose Hospital (San Jose, California), for example, the program is run by the recovery room nursing staff to ensure continuity during the early postoperative period. During the early evening before operation an audiovisual program, prepared by the nursing service, is shown to all available preoperative patients. This is followed by a session in which leg and breathing exercises are taught. Each patient is then visited by a nurse who asks open-ended questions (that is, designed to permit spontaneous responses). A summary nursing record sheet is prepared, listing special problems that should be considered during the operative procedure or in the immediate postoperative period. This record includes issues elicited during the interview, such as special fears or anxieties. The summary sheet is reviewed by the nursing staff in the operating room, recovery room and on the surgical floor.

The available evidence is quite convincing that this type of program should be encouraged in all of our hospitals.

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REFERENCES

- Egbert LD, Battit GE, Welch CE, et al: Reduction of postoperative pain by encouragement and instruction of patients—A study of doctor-patient rapport. *N Engl J Med* 1964 Apr 16; 270: 825-827
- Flaherty GG, Fitzpatrick JJ: Relaxation technique to increase comfort level of postoperative patients: A preliminary study. *Nurs Res* 1978 Nov-Dec; 27(6):352-355
- Johnson JE, Fuller SS, Endress MP, et al: Altering patients' responses to surgery: An extension and replication. *Res Nurs Health* 1978 Oct; 1(3):111-121

Culdocentesis to Diagnose Ectopic Pregnancy and Pelvic Inflammatory Disease (PID)

PROMPT AND ACCURATE DIAGNOSIS of ectopic pregnancy and acute salpingitis is critical for timely and appropriate treatment. Delay and misdiagnosis can result in an unnecessary surgical procedure, delay in necessary surgical or antibiotic treatment and increased patient morbidity and mortality.

Culdocentesis is a simple, safe and efficient diagnostic tool that allows direct examination of free intraperitoneal fluid and provides immediate, accurate and readily interpretable information.

In proved ectopic pregnancy, culdocentesis yields nonclotting blood with up to 82 percent accuracy. Accuracy increases to 97 percent when combined with radioreceptor assay (RRA) pregnancy test. In acute salpingitis purulent peritoneal fluid can be examined directly with greater accuracy than endocervical fluid.

Careful patient selection and good fundamental technique are critical to success. In both suspected ectopic pregnancy and acute salpingitis there should be signs of peritoneal irritation—that is, pain on cervical motion, rebound tenderness, a bulging cul-de-sac or shoulder pain. If a patient has none of these, culdocentesis is less likely to be useful. Similarly, a fixed mass or a fixed retroverted uterus that fills the cul-de-sac contraindicates culdocentesis.

The essential equipment are a speculum, a tenaculum, an 18-gauge spinal needle, a 10-ml syringe (a three-finger control syringe is more convenient), sterile sponges and ring forceps, iodine preparatory solution and gloves. Good sterile technique should be used.

The technique includes the following steps: (1) a thorough pelvic examination, including careful bimanual examination (for cervical tenderness, uterine position, adnexal or cul-de-sac masses or tenderness); (2) speculum placement and preparation of cervix and vagina; (3) application of the tenaculum to the lower lip of the cervix (caution patients about cramps) and positioning of the cervix to allow access to the cul-de-sac; (4) draw 2 to 3 ml of air into the syringe; (5) puncture the vaginal mucosa in the midline 1 cm below its posterior reflection away from the cervix. The needle should penetrate below the cervix and uterus and above the rectum; (6) hold the needle and syringe horizontally and advance 3 to 4 cm through the mucosa; (7) inject the 2 to 3 ml of air. If there is resistance the needle has entered solid tissue and should be repositioned; (8) aspirate, and (9) the procedure is terminated after aspiration of fluid or three dry taps. Bleeding will be minimal.

Complications are very rare and are primarily the result of penetration of pelvic organs, cysts or tumors. They should be avoidable with good technique.

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REFERENCES

- Brenner PF, Roy S, Mishell DR Jr: Ectopic pregnancy—A study of 300 consecutive surgically treated cases. *JAMA* 1980 Feb 15; 243(7):673-676
- Eisinger SH: Culdocentesis. *J Fam Pract* 1981 Jul; 13(1):95-101
- Quan M, Rodney WM, Puffer JC: Ectopic pregnancy: A clinical review. *J Fam Pract* 1982 Mar; 14(3):561-566